

**Abstract Title Page**

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**Title:** The Impacts of the Chicago Welcoming Schools' Safe Passage Program on Student Safety and Crime

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## **Abstract Body**

*Limit 4 pages single-spaced.*

### **Problem / Background / Context:**

*Description of the problem addressed, prior research, and its intellectual context.*

Students' ability to succeed academically in the school setting depends heavily on factors that students face outside of the school walls. One such contributor is the presence of a safe environment for students to travel to and from school. Unfortunately, for many students in urban and economically depressed environments, the daily commute to and from school represents a risky undertaking riddled with potential violence and crime. The presence of such low-safety environments around schools has the potential to result in increased absenteeism as well as increased levels of stress among students, both of which contribute to decreased academic performance.

The City of Chicago has drawn national headlines for violence against students before and after school, a violence that has prompted the Chicago Public Schools (CPS) to develop the Safe Passage program. The Chicago Safe Passage program represents one of the most robust interventions for improving student safety while commuting to and from school. The Safe Passage program involves the hiring and placement of a large number of adult monitors along the streets leading to and from schools. The presence of these monitors has the potential to reduce crime and increase safety but comes at a significant financial cost due to the large number of personnel involved.

### **Purpose / Objective / Research Question / Focus of Research:**

*Description of the focus of the research.*

The purpose of this study is to examine the impact of the Safe Passage program on crime around Chicago public schools. Specifically, I seek to answer the following research questions:

- 1) What is the effect of the Safe Passage program on the number of criminal incidents within the vicinity of CPS schools?
- 2) Does the impact of the Safe Passage program on criminal incidents differ by crime type?
- 3) Does the Safe Passage program reduce criminal incidents around schools or redistribute criminal incidents within the vicinity surrounding schools?

### **Improvement Initiative / Intervention / Program / Practice:**

*Description of the improvement initiative or related intervention, program, or practice.*

The Chicago Safe Passage program operates with the goal of increasing the safety of students as they travel to and from school. The program, which was initiated as a pilot in 2007, places Safe Passage employees on streets and paths around select schools. These employees work part-time, during the hours in which students commute to and from school, to serve as an adult presence and watchful eye during the commute. In response to recent increases in crime and the closing of a number of Chicago public schools, the Safe Passage program was vastly expanded from its pilot form at a handful of high schools to include nearly fifty elementary schools.

The Safe Passage program represents a significant financial investment. Safe passage employees work for five hours a day for five days a week at a rate of 10 dollars per hour (CPS – Safe Passage, 2013). With nearly 600 Safe Passage employees hired (Associated Press, 2013), the weekly cost of wages alone will run upwards of 150,000 dollars. This cost, however, could be justified if the program significantly reduces crimes and improves the safety of students.

**Setting:**

*Description of the research location and partners involved, if applicable.*

In Chicago, crime and the related outcome of student safety are issues of large concern. National attention turned to the issue of student safety in Chicago after the 2009 beating death of Derrion Albert, an honors student attacked on the way home from school (ABC News, 2009). Unfortunately, this incident was only one in a number of violent crimes against students that have occurred over the last several years. First Lady Michelle Obama has brought attention to this issue in recent interviews, citing the case of Harper High School in which 29 current or former students have been shot in the last year alone (DNAInfo Chicago, 2013). During the first month of the 2013-2014 school year, this violence has come to heads with the newly expanded Safe Passage program as the media reports of murders occurring along Safe Passage routes and drive-by shootings of Safe Passage workers.

**Population / Participants / Subjects:**

*Description of the participants in the research: who, how many, key features, or characteristics.*

The unit of analysis for this study is days with geocoded crime measurements around CPS schools.

**Research Design:**

*Description of the research design.*

I assess the impact of the Safe Passage intervention on incidents of crime through several approaches all of which broadly adhere to a difference-in-differences methodology. The difference-in-differences approach identifies treatment effects through the use of longitudinal data on both the treated and untreated groups. The first difference partials out the impact of being after the start of treatment on the outcome as compared to being before the start of treatment. This first difference is performed for both the treatment and control groups. In the case of this study, the first differencing amounts to assessing the relationship between being at points in time after the start of Safe Passage for both the treated and untreated groups. The second difference assesses the difference between the treated group's first difference and the untreated group's first difference. In other words, the second difference looks for a differential impact of being in time points after the start of treatment, where this differential impact is predicted by treatment status. To the extent that the differential impact of being after treatment is attributable to the treatment, this approach allows for a causal estimate of the treatment under study.

In practice, the difference-in-differences approach is implemented utilizing interaction terms in longitudinal data. The base model utilized in this analysis is as follows:

$$1) \text{Crime}_{ij} = \text{SafePassage}_{ij}B_1 + \text{After}_{ij}B_2 + \text{SafePassage} * \text{After}_{ij} B_3 + X_{ij}B_4 + u_{ij}$$

Where Crime represents the standardized number of criminal incidents occurring in a specific area, SafePassage is a binary variable representing whether or not the area received the Safe Passage treatment, After is binary variable representing whether or not the observation is in a time point after the start of the Safe Passage intervention, SafePassage\*After is the interaction term between SafePassage and After, X is a vector of control variables, and u is the error term. The coefficient of particular interest in this study is that of the interaction term, namely  $B_3$ . If modeled correctly, this interaction term can be interpreted as the impact of the Safe Passage intervention on criminal incidents in the given area.

Several different versions of model 1 were examined. The first approach involved measuring the number of crimes within a given radius of each CPS school. Criminal incidents were compiled for a radii of  $\frac{1}{4}$  of a mile around each school. These criminal incidences were further broken down by type of incident, such as burglary, assault, trespassing, etc. Under this approach, the untreated group consists of schools that did not receive the Safe Passage program.

### **Data Collection and Analysis:**

*Description of the methods for collecting and analyzing data or use of existing databases.*

The data utilized for this study are drawn from both public data sources in addition to data generated uniquely for the purposes of this study. Data on crimes were acquired through the City of Chicago's Data Portal. The City of Chicago's Data Portal provides access to a rich crime data set containing all reported crimes back to 1991. Each criminal incident is time stamped with date and time, contains a category for nature of offense, includes a block and street number, and comes geocoded with latitude and longitude. For the purposes of this study, the crime data was restricted to criminal incidents occurring between July 1<sup>st</sup>, 2013 and December 31<sup>st</sup>, 2013. This time period was chosen to include approximately two months of data prior to the start of the 2013-2014 school year and approximately four months of data after the start of the school year. Data was limited to weekdays given that the Safe Passage intervention is school-centric and does not operate on weekends.

The Federal Bureau of Investigation (FBI) tracks and reports crime statistics as a part of the Uniform Crime Reporting system. Under this nationally recognized system, a number of "index offenses" are tracked and uniformly categorized. These categorizations include violent offenses (homicide, rape, robbery, and assault) as well as property crimes (burglary, larceny, motor vehicle theft, and arson) (U.S. Department of Justice, 2004). Crime data provided by the City of Chicago conforms to these "index crime" categorizations while also reporting on additional categories of crime.

Data on Safe Passage schools and street locations were acquired through the CPS website in addition to the City of Chicago Data Portal. The Data Portal offered GIS coded shape files while the CPS website offered visual maps of Safe Passage streets. Coding of comparison group street segments was performed by the researcher using these CPS maps and the ArcGIS software package.

Finally, data on schools were drawn from public use files available from the Chicago Data Portal. This data includes student performance scores on a variety of academic assessments. Additionally, the school data includes responses to the 5Essentials survey, a survey given to students, teachers, and other school personnel. Developed by researchers with the Chicago Consortium on School Research, the 5Essentials survey measures schools on five areas:

leadership, teachers, families, school environment, and instruction (5Essentials, 2014). The data on schools are used as controls in a number of the analytic models.

### **Findings / Outcomes:**

*Description of the main findings or outcomes, with specific details.*

To address the first research question, the coefficient of interest for estimating the impact of the Safe Passage program on criminal incidences is the interaction term between being a Safe Passage route and school being in session. For total crime, this impact is estimated as a 0.07 standard deviation decrease in crime. This is approximately 78% the size of the impact of school being in session. In other words, the Safe Passage program appears to reduce total crimes within a quarter mile of an elementary school by approximately 19 incidences per day across the city. Interestingly, the reduction in crime does not seem to be driven by changes in school hour crimes. This could be indicative that the mechanism for reducing crime is more dependent on efforts outside of the presence of the Safe Passage workers.

### **Conclusions:**

*Description of conclusions, recommendations, and limitations, based on findings.*

Utilizing a difference-in-differences methodology, I found that the Safe Passage Program reduces total crimes by approximately 0.15 standard deviations in the vicinity of a Safe Passage School. In the context of educational interventions, this effect size represents a reasonably large effect. Additionally, given the societal cost associated with crime, even small reductions in crime can produce reasonably large economic returns. Consistent with the location of the intervention, I found the largest reduction in crime to be among those occurring outside.

These findings have implications for district administrators and other policy makers. Particularly, the results suggest that the Safe Passage program reduces crime around schools and provides a safer environment for students during the commute to and from school. For other urban districts facing issues around student safety, the implementation of a program similar to Safe Passage may provide a mechanism for increasing student safety.

Given the non-random selection of schools for the Safe Passage Program, issues of selection bias and unobserved confounding variables were a concern in this study. I attempted to address these concerns with the use of a difference-in-differences methodology and by the inclusion of control variables. Though robust to several sensitivity tests, the results did not hold when the difference-in-difference methodology was applied across years rather than across the summer and fall period. Consequently, these results do not entirely preclude the threat of confounding variables and should be interpreted accordingly.

## Appendices

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### Appendix A. References

*References are to be in APA version 6 format.*

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## Appendix B. Tables and Figures

Table 4. Results of regressions predicting standardized crime within a quarter mile of schools from safe passage variables by crime type							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All Crime	Domestic Crime	Arrests	Outside Crime	Crime Involving Children	Battery	Robbery
Safe Passage School	0.033 (0.024)	-0.006 (0.028)	0.095** (0.025)	0.111** (0.027)	0.037 (0.029)	0.033 (0.027)	0.008 (0.028)
School in Session	-0.095** (0.008)	-0.051** (0.010)	-0.069** (0.008)	-0.111** (0.009)	-0.011 (0.010)	-0.044** (0.009)	-0.021* (0.009)
Safe Passage School * School in Session	-0.072** (0.023)	-0.051 (0.027)	-0.057* (0.024)	-0.151** (0.026)	0.006 (0.028)	-0.086** (0.026)	0.012 (0.027)
School Demographic Controls	X	X	X	X	X	X	X
Observations	54,648	54,648	54,648	54,648	54,648	54,648	54,648
R-squared	0.108	0.037	0.072	0.073	0.001	0.041	0.009
Standard errors in parentheses; Outcomes are standardized							
** p<0.01, * p<0.05							



Table 4 cont'd. Results of regressions predicting standardized crime within a quarter mile of schools from safe passage variables by crime type						
	(8)	(9)	(10)	(11)	(12)	(13)
	Assault	Theft	Trespass	Narcotics	Weapons	School Hours Crime
Safe Passage School	-0.035 (0.028)	-0.002 (0.022)	0.047 (0.027)	0.044 (0.026)	0.017 (0.028)	-0.012 (0.024)
School in Session	-0.008 (0.009)	-0.046** (0.007)	-0.023* (0.009)	-0.039** (0.009)	-0.027** (0.009)	-0.025** (0.008)
Safe Passage School * School in Session	-0.036 (0.027)	-0.032 (0.021)	0.014 (0.026)	-0.060* (0.025)	-0.018 (0.027)	0.021 (0.023)
School Demographic Controls	X	X	X	X	X	X
Observations	54,648	54,648	54,648	54,648	54,648	54,648
R-squared	0.013	0.016	0.006	0.067	0.005	0.067

Standard errors in parentheses; Outcomes are standardized

\*\* p<0.01, \* p<0.05